



Installation

Operation

Maintenance

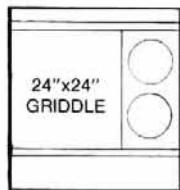
Troubleshooting

Model: 36S

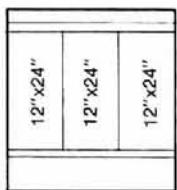
Lang Electric Range

36S SERIES TOP COMBINATIONS

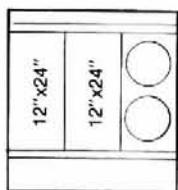
- OTHER TOP COMBINATIONS AVAILABLE -



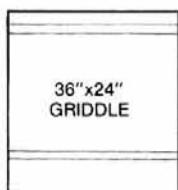
36S-0
36S-5



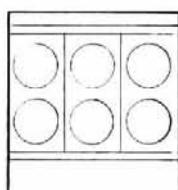
36S-2
36S-7



36S-3A
36S-8A



36S-10
36S-11



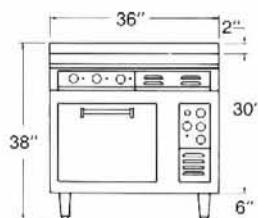
36S-20
36S-21

RANGE TOP COMBINATIONS WITH OVEN

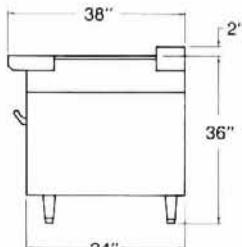
MODEL NO.	TOP ARRANGEMENT
36S-0	1—24" x 24" x 1/2" Griddle** 2—French Plates*
36S-2	3—12" x 24" Hot Tops**
36S-3A	2—12" x 24" Hot Tops** 2—French Plates*
36S-10	1—36" x 24" x 1/2" Griddle**
36S-20	6—French Plates*

*6 Heat Switch

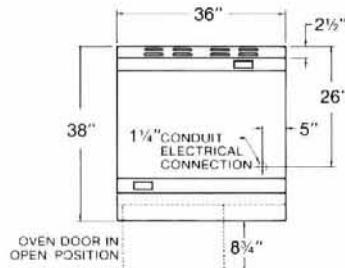
**Thermostat



FRONT VIEW



SIDE VIEW



TOP VIEW

INSIDE OVEN DIMENSIONS: Width — 22"; Depth — 27 3/4"; Height — 12"

SPACING REQUIREMENTS: 3" Sides and Back from Combustible Surface

36S RANGE MODELS	ELECTRICAL DATA FOR 36S SERIES RANGES AND COOKING TOPS												SHIPPING WEIGHT			
	THREE PHASE LOADING			TOTAL K.W. CONN.	NOMINAL AMPS PER LINE											
	K.W. PER PHASE				208 VOLT			240 VOLT			480 VOLT		208 V	240 V		
	L1-L2	L2-L3	L3-L1		L1	L2	L3	L1	L2	L3	L1	L2	L3			
RANGE	6.0	10.0	5.0	21.0	45.8	66.7	62.5	39.7	57.8	54.2	19.9	28.9	27.1	101.0	87.5	600 lbs.
TOP ONLY	5.0	5.0	5.0	15.0	41.7	41.7	41.7	36.1	36.1	36.1	18.1	18.1	18.1	72.1	62.5	410 lbs.

WHEN ORDERING SPECIFY VOLTAGE AND PHASE

Specifications subject to change without notice.

LANG MANUFACTURING COMPANY

INTRODUCTION

This manual contains the necessary information to install, operate, maintain, and service the Lang model 36S series electric range.

Replacement parts should be genuine Lang parts. Failure to use genuine Lang replacement parts may result in malfunction of the appliance or possible injury to the operator, contractor or service technician.

PURPOSE AND FUNCTION

Oven for all purpose baking and roasting. Range top options for frying, boiling, simmering, etc. Designed to cook a wide variety of food products including eggs, hamburgers, fish, roasts, chicken, pancakes, soup, broth, coffee, cakes, rolls, etc.

CAPABILITIES

These ranges are capable of all baking and roasting needs plus a wide variety of range top cooking requirements.

ITEMS REQUIRED

An adequate supply of wire suitable for the loads and application specified on the data sheet must be provided. The data sheet is on Page 2 of this manual.

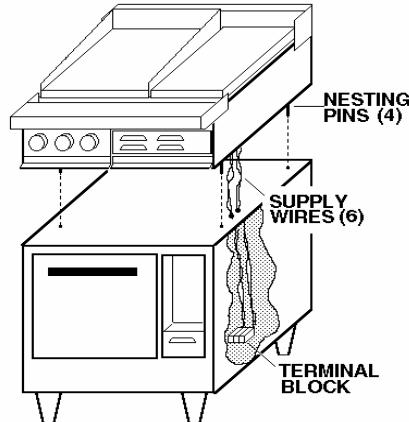
TOOLS AND TEST EQUIPMENT REQUIRED

For installation:

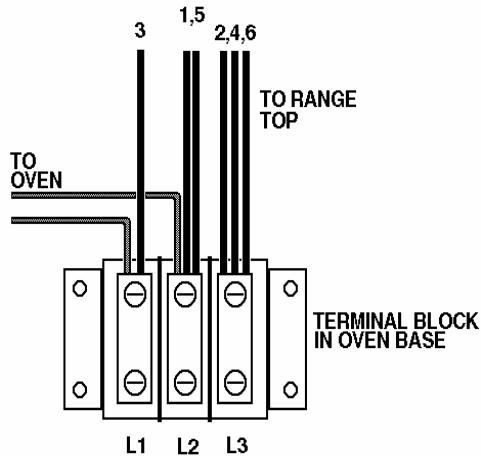
- 1 set – Open End Wrenches
- 1 ea – Flat Blade Screwdriver
- 1 ea – Phillips Screwdriver
- 1 ea – Wire Cutter/Stripper
- 1 ea – AMP Probe
- 1 ea – Voltmeter

For service: All of the above plus –

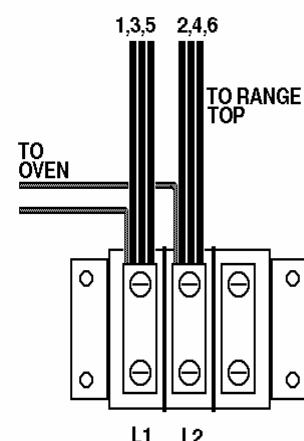
- 1 ea – Needle Nose Pliers
- 1 ea – Crimping Pliers
- 1 ea – Allen Wrench Set
- 1 ea – Temperature Meters
- 1 ea – Very Small Flat Blade Screwdriver



THREE PHASE



SINGLE PHASE



INSPECTION AND INSTALLATION

Upon receipt of the range and damage should be noted on the Bill of Lading and countersigned by the carrier. If concealed damage is discovered the carrier should be notified. All claims must be filed with the carrier.

The Lang model series 36S electric oven range was designed in modular construction to allow passage through a 26 inch by 66 inch watertight door or through standard building doors.

Move the crate containing the range as close to the place of installation as possible before removing the protective crating. Uncrate the range and move as close as practical to the final installation site.

Remove the legs from inside the oven. Attach the legs to the bottom corner of the oven screwing into the threaded hole provided. Then set the oven in place.

Place spacers, (ie. 2 x 4 wood block not supplied) at the front and rear of the oven top.

Place the range top on the spacers that are located on top of the oven.

The six wire leads to supply electricity to the cook top are bundled under the front bottom of the top. Route these wires through the bushing provided in the oven top.

Align the four locating pins in the bottom corner of the top with the four holes in each corner of the oven top.

Remove the spacers and lower the top onto the oven.

WARNING: Make sure the six wire leads to supply electricity to the cook top are not crimped between the oven and range top.

WARNING: Make sure the main power supply to the range is turned OFF at the source prior to connecting power to the range.

The range can now be connected to power.

CAUTION: Be sure the power supply voltage matches the voltage specified on the nameplate located on the front of the range.

Use the wiring diagram provided in this manual for determining the connections of the cook top wires to the oven terminal block.

Electrical service connection is made through the bottom of the oven. A hole is provided for the attachment of 1-1/4 inch conduit. See figure #2 on Page #2.

Use the wiring diagram provided in this manual to determine the electrical specification.

WARNING: The range must be phased per the wiring diagram.

SAFETY PRECAUTIONS AND WARNINGS

WARNING: Make sure the six wire leads to supply electricity to the cook top are not crimped between the oven and range top.

WARNING: Make sure the main power supply to the range is turned OFF at the source prior to connecting power to the range.

Refer to Inspection and Installation.

CAUTION: Be sure the power supply voltage matches the voltage specified on the nameplate located on the front of the range.

Refer to Inspection and Installation.

WARNING: The range must be phased per the wiring diagram.

Refer to Inspection and Installation.

CAUTION: Before the initial use of the range, the oven must be thoroughly allowed to dry itself out. This is done by setting the top and bottom oven switches to the “low” position, and setting the thermostat to 350°F. Allow the range oven to heat until all vapor and condensation has been eliminated. For best operating results allow the range oven to thoroughly dry out. Allow 8 to 12 hours for this process. Clean top plates thoroughly. Apply salad oil. Turn each plate switch or thermostat to a low position and allow plate to heat for three hours.

Refer to Initial Start-up

WARNING: Burns could occur when dealing with hot grease!

Refer to Maintenance Instructions, Daily cleaning.

CAUTION: When scraping griddle surface, do not scrape splashguard. It may eventually be cut through.

Refer to Maintenance Instructions, Weekly cleaning.

CAUTION: Any oven cleaner used should be marked: “Safe on Aluminum”. We recommend “SOKOFF”.

Refer to Maintenance Instructions, Weekly cleaning.

WARNING: Disconnect Range from power before attempting any repair.

Refer to Major component disassembly.

CAUTION: After installing the new thermostat be positive the silver tube is not near any exposed terminals. If the thermostat tube touches any live terminals it will be destroyed and have to be replaced again.

Refer to Major component disassembly.

CAUTION: Make sure element pan is clamped tightly to the bottom of griddle plate or hot top and that thermostat capillary tube is secure in capillary clamp and tight against bottom of griddle plate, if present.

Refer to Major component disassembly, element replacement / Hot top or griddle.

OVEN OPERATING INSTRUCTIONS

Range Controls

Three heat switches or automatic thermostats control the top plate units. The range is provided with an upper heating unit located in the top of the oven and a lower heating unit located under the metal deck, in the bottom of the oven. Each heating unit is independently regulated for proper ratio of "top" and "bottom" heat, to suit the product being baked or roasted, by means of two 3-heat switches located in the panel at the right of the range. The range oven is also provided with an adjustable, automatic temperature control, the dial which is located in the range switch panel. The setting of the control dial establishes the average temperature to be maintained in the range oven.

The black control knob operates a damper in the oven vent stack. Damper is open when knob is pulled outward.

The two fuses on the control panel protect the electrical components from overload.

INITIAL START-UP

CAUTION: Before the initial use of the range, the oven must be thoroughly allowed to dry itself out. This is done by setting the top and bottom oven switches to the "low" position, and setting the thermostat to 350°F. Allow the range oven to heat until all vapor and condensation has been eliminated. For best operating results allow the range oven to thoroughly dry out. Allow 8 to 12 hours for this process. Clean top plates thoroughly. Apply salad oil. Turn each plate switch or thermostat to a low position and allow plate to heat for three hours.

NOTE: Somewhere along the rising temperature curve between 200° and 300° F a moderate amount of smoke may issue from in and around the Range. The smoke may be repeated somewhere around 350°. Preservative oils and oil accumulated during manufacture may be coming off as smoke in these temperature ranges. Do not be alarmed.

Range Top

12 x 24 Hot Plate or Round Speed Units, controlled by 3-heat switch, 6-heat switch or high temperature thermostats.

Round speed units, controlled by 3-heat switch or 6-heat switch. Recommended: Light duty sauce pans and small stockpots. Not Recommended: Heavy stockpots, or heavy urns, or kettles.

12 x 24, 24 x 24, or 24 x 36 Griddle plates, controlled by thermostats. Temperature range 450° F. Recommended: All heavy and light frying. Set the thermostat dial at the desired temperature. The red pilot light will be illuminated until the desired temperature is reached. The pilot light indicates when the plate is heating.

Maintenance Instruction

Daily Cleaning

WARNING: Burns could occur when dealing with hot grease!

Empty grease drawers daily or when they are 1/3 full. They are easily removed for washing.

Clean exterior of the range with hot water and a mild detergent to maintain a gleaming appearance.

Keep the griddle plate surface clean. After each cooking load, scrape the griddle surface to remove any carbonized grease.

Caution: When scraping the griddle surface, do not scrape the splashguard. It may eventually be cut through.

Weekly Cleaning

The range should be thoroughly cleaned at least once a week in addition to the normal daily cleaning to insure against the accumulation of foreign material. Keep inside of oven and metal deck clean, particularly around door opening, door edges and at bottom of door opening so that the door may close tightly.

NORMAL OPERATION

The range oven must be thoroughly preheated before satisfactory baking can be done. The range oven will not bake uniformly if not sufficiently preheated. To compensate for temperature drop when loading the range oven, set the thermostat up 50° over the desired temperature. Reset thermostat after the range is loaded. The range oven may, of course, be preheated with the 3-heat switches set at a lower position than "high", but the time required will be proportionally longer. After preheating, set the two 3-heat switches for proper ratio of "top" and "bottom" heat to suit the product to be baked or roasted. (see Table 1 below).

The "Roasting and Baking" range oven is equipped with a removable rack. For baking pies, bread, or for roasting operations, the rack may be placed directly on the metal deck and the pans placed on the rack. For baking cakes or pastries the rack should be located in the lower position provided by the rack supports at the sides of the range and the pans placed on the rack in this lower position.

The following temperature, time, switch settings and rack positions are suggested as a guide in baking various classes of products.

Class of Product	Average Temperature	Time min.	Switch Setting		Rack Position
			Top	Bottom	
Pies	375-425	35-60	Low	Medium	On deck
Rolls	375-400	15-30	Low	High	Rack Support
Cakes	350-400	20-45	Low	High	Rack Support
Pastries	325-375	8-20	Low	High	Rack Support
Bread	425-450	25-45	Low	Medium	On deck
Roast Beef	300-325		Low	Hi/Med.	On deck

TABLE 1

NOTE: Always place the pans symmetrically on the rack for best results. Keep the oven door closed as much as possible. Excessive door opening will cool the front section of the oven and products place near the front are likely to bake slower. It is desirable to keep the front edge of the pans at least several inches back from the inside of the door (when closed). Do not permit air from a window or fan to blow into the oven; it will cause uneven heating.

CAUTION: Any oven cleaner used should be marked: "Safe on Aluminum". We recommend "SOKOFF".

Keep drip pans under range top plates clean.

Keep hot plate and griddle surfaces clean.

Outside of range and top should be kept clean.

THERMOSTAT CALIBRATION:

All thermostats are factory calibrated and are extremely reliable mechanical devices. Calibration of thermostats should only be attempted if continued experience dictates unsatisfactory cooking temperatures.

Calibrating the Griddle

Locate a surface thermometer in the center of each 12" x 24" section.

Set the thermostat at 350° and allow the temperature to stabilize.

Record three "cycle" temperatures and three "cycle off" temperatures. Average the six readings. They should fall within fifteen degrees of the set temperature.

To adjust the thermostat, remove the knob and insert a small flat blade screwdriver down the center of the shaft to a screw located at the end.

Turning the screw counterclockwise raises the temperature and turning the screw clockwise lowers the temperature. Use caution when adjusting and turn the screw in 1/8 turn intervals to avoid over correction. A 1/8 turn changes the thermostat calibration approximately 5°.

Calibrating the Oven

Locate an oven thermometer or thermocouple in the center of the oven cavity.

Follow the same procedures for calibrating the grill.

TROUBLE SHOOTING GUIDE		
SYMPTOM	PROBLEM	REMEDY
Not heating	Loose Terminal Connections	Tighten Terminals
	Improper Voltage	Change Voltage to match Range
	Defective Elements	Replace Elements
Thermostat Inoperative	Broken Capillary Tube	Replace Thermostat
	Loose Connections	Tighten Terminals
	Improper Voltage	Change Voltage to match Range
Temperature Fluctuation	Out of Calibration	Recalibrate Thermostat
Pilot Light Out	Defective	Replace
Power Supply Circuit Breakers Trip	Supply Breakers insufficient size	Install proper size breakers
	Supply voltage & range voltage do not match	Change voltage to match range
Internal Circuit Breakers Trip	Supply voltage & range voltage do not match	Change voltage to match range
Too long to heat	Improperly Phased	Phase range to match power supply per wiring diagram

PERFORMANCE AND INSPECTION

A periodic check of thermostat calibration should be performed.

Calibration Check:

Put a surface type thermometer or thermocouple in the center of each top section.

Set thermostat knobs to 350° F and allow the plate to cycle for 30 minutes.

Then take 10 readings each 3 minutes apart and calculate the average temperature.

After calculating the average temperature check the reading when the pilot light goes “ON” and again when the pilot light goes “OFF” three consecutive times. If the “ON” and “OFF” temperature reading drift in either direction, the plate has not yet reached stabilization temperature.

When stabilized, the “ON” and “OFF” temperature should fall within a plus or minus 25° F of the temperature set on the dial.

NOTE: If these requirements are met., the thermostats do not need calibration adjustment.

MAJOR COMPONENT DISASSEMBLY, REPAIR, REPLACEMENT AND REASSEMBLE:

Refer to Figure #3

WARNING: Disconnect Range from power before attempting any repair.

THERMOSTAT REPLACEMENT: Oven

Inside the oven cavity remove the retaining clips holding the thermostat-sensing bulb in place. Deed the bulb through the oven wall into the control panel area. Remove the wires attached to the thermostat terminals. Remember the terminal each wire was on and attach the wires to the same terminal on the new thermostat. Remove the screws holding the old thermostat to the front of the control panel. Discard old thermostat. Mount the new thermostat to the control panel, carefully feed the sensing bulb through the oven wall and reattach the sensing bulb to the oven side using the retaining clips removed earlier. Close control compartment. Restore power to the oven.

THERMOSTAT REPLACEMENT: Range

Raise the griddle or hot top plate up to allow access to the bottom of the plate. The thermostat is the silver tube clamped to the bottom of the griddle or hot top through the slot in the element holder. Remove bracket holding the sensing bulb to the bottom of the plate. Fish the old tube and bulb through the wireway out of the front of the range. Install the new thermostat by reversing these steps.

CAUTION: After installing the new thermostat be positive the silver tube is not near any exposed terminals. If the thermostat tube touches any live terminals it will be destroyed and have to be replaced again.

ELEMENT REPLACEMENT: Oven

Remove sheet metal screws holding control panel to range.

Remove wires from affected oven element. Mark wires for proper replacement.

Bend tab on clips holding element to oven top or bottom, to allow element to be pulled out of bushing through oven wall.

Reverse procedure for installation.

ELEMENT REPLACEMENT: Hot top or griddle

Remove grease drawers from under griddle or hot top.

Remove upper control panel, leaving controls attached to panel.

Remove terminal block cover, located behind louvered door to the right of the upper controls.

Remove the wires going to griddle or hot top elements from thermostats, if present. Push wires through wire tubes to gain slack wire under griddle or hot top.

Uncoil thermostat capillary tubes and push through holes in rear of control box to gain slack under grill if present.

Using a 2" x 4", or similar lever, pry front edge of griddle of hot top u. block front edge of griddle at approximately eight inches high.

Remove the two (2) 10 x 1/2" sheet metal screws holding the capillary tube clamp, if present, to the bottom of the affected element pan.

Remove four (4) nuts attaching the wires to the elements. Mark the wires for proper replacement.

Remove five (5) 5/16 hex nut holding the element pan to the griddle plate and lower the element pan until it clears the attaching stud.

Remove the element pan from the range and remove and discard affected element.

Clean all slag and debris from element pan. Make sure there are no sharp objects remaining at the point where the old element shorted.

Reverse procedure for Installation.

CAUTION: Make sure element pan is clamped tightly to the bottom of griddle plate or hot top and that thermostat capillary tube is secure in capillary clamp and tight against bottom of griddle plate, if present.

PREPARATION FOR RESHIPMENT

Refer to Installation Instructions. Follow these instructions in reverse order. When range is disassembled coat the exterior and surfaces with protective oil for preservation during storage. Then crate each major piece in a wooden box suitable for forklift access. Insure that adequate cushioning is provided on all sides to prevent in-transit damage.

MODEL DESIGNATION			TOP ARRANGEMENT			TOP SECTION WIRE DIAGRAMS		
			SEC-1	SEC-2	SEC-3	2000		
36S-11		A	A	A				
36S-21		C	C	C				
36S-5		A	A	C				
36S-7		B	B	B				
36S-8A		B	B	C				
① THERMOSTAT ② 6 HEAT SWITCH ③ PILOT LAMP ④ CIRCUIT BREAKER ⑤ SPEED UNIT ⑥ HEAT ELEMENT ⑦ CAST HOT TOP								

MODEL DESIGNATION			TOP ARRANGEMENT			TOP SECTION WIRE DIAGRAMS		
			SEC-1	SEC-2	SEC-3			
36S-11		A	A	A				
36S-21		C	C	C				
36S-5		A	A	C				
36S-7		B	B	B				
36S-8A		B	B	C				
①	THERMOSTAT							
②	SIX HEAT SWITCH							
③	PILOT LAMP							
④	SPEED UNIT-(EGD)							
⑤	HEAT ELEMENT							
⑥	CAST HOT TOP							
							<img alt="Wire diagram for SEC-2 (A) showing connections for 2000 and 3000 models. Terminals 1, 2, 3, 4, 5, and 6 are connected to various components including a thermostat (1), heat switch (2), pilot lamp (3), speed unit (4), heat element (5), and a cast hot top (6). A 2000 model is shown with a 2000 ohm resistor in series with the heat element. A 3000 model is shown with a 3000 ohm resistor in series with the heat element. Terminals 1, 2, 3, 4, 5	

PARTS LIST

DESCRIPTION	PART NO.
Element Top Plate 208V O/S 2000 Watts	11010-09
Element Top Plate 208V I/S 3000 Watts	11010-10
Element Top Plate 240V O/S 2000 Watts	11010-21
Element Top Plate 240V I/S 3000 Watts	11010-22
Element Top Plate 480V O/S 2000 Watts	11010-23
Element Top Plate 480V I/S 3000 Watts	11010-24
Hot Plate Cast Assy with Elements 208V 5000 Watts	PS-11010-341
Hot Plate Cast Assy with Elements 240V 5000 Watts	PS-11010-351
Hot Plate Cast Assy with Elements 480V 5000 Watts	PS-11010-361
Element 36 Oven 240 Volt O/S 1800 Watts	11050-25
Element 36 Oven 240 Volt I/S 1200 Watts	11050-26
Element 36 Oven 480 Volt O/S 1800 Watts	11050-29
Element 36 Oven 480 Volt I/S 1200 Watts	11050-30
Element 36 Oven 208 Volt O/S 1800 Watts	11050-31
Element 36 Oven 208 Volt I/S 1200 Watts	11050-32
Element French Plate 208 Volt 2600 Watts	11120-12
Element French Plate 240 Volt 2600 Watts	11120-13
Element French Plate 480 Volt 2600 Watts	11120-14
Switch Rotating 3 Heat	30304-06
Switch Rotating 6 Heat + Off	30304-09
Thermostat 550°F Oven	30402-07
Thermostat 450°F Griddle	30402-08
Thermostat 850°F Hot Top	30402-23
Pilot Light 208/240 Volt 6" Lead Black Body	31601-01
Pilot Light 480 Volt 6" Lead Black Body	31601-02
Circuit Breaker 208/240 Volt 1-Pole	31800-01
Circuit Breaker 480 Volt 3-Pole	31800-04
Element Pan Assembly with Snout	50300-20
French Plate Frame Assembly	50300-82
Element Clip Long	50301-09
Element Clip Short	50301-10
Element Bushing Metal	50301-11
Range Plate Assy 1/2" x 1 foot	50401-01
Range Plate Assy 1/2" x 2 foot	50401-02
Range Plate Assy 1/2" x 3 foot	50401-03
Tension Disc Oven Door	50800-07
Spring Left Side 7 1/2" Long – Oven Door	51001-01
Spring Right Side 7 1/2" Long – Oven Door	51001-02
Handle Assembly Oven Door	70603-05
Knob Manual Timer	70701-09
Knob 3 Heat Switch	70701-10
Knob Thermostat 550°F Oven	70701-15
Knob Thermostat 450°F Griddle	70701-16
Knob Damper Black	70701-25
Knob Thermostat 850°F Hot Top	70701-35
Knob 6 Heat Switch	70701-41

Lang Manufacturing Limited Warranty to Commercial Purchasers* (Domestic U.S., Hawaii, & Canadian Sales only.)

Lang Manufacturing Equipment (“Lang Equipment”) has been skillfully manufactured, carefully inspected and packaged to meet rigid standards of excellence. Lang warrants its Equipment to be free from defects in material and workmanship for (12) twelve consecutive months, with the following conditions and subject to the following limitations.

I. This parts and labor warranty is limited to Lang Equipment sold to the original commercial purchaser/users (but not original equipment manufacturers), at its original place of installation, in the continental United States, Hawaii and Canada.

Quartz elements are warranted for ninety(90) days from the date of installation.

II. Damage during shipment is to be reported to the carrier, is not covered under this warranty, and is the sole responsibility of purchaser/user.

III. Lang, or an authorized service representative, will repair or replace, at Lang’s sole election, and Lang Equipment, including but not limited to, safety valves, gas and electric components, found to be defective during the warranty period. As to warranty service in the territory described above, Lang will absorb labor and portal to portal transportation costs (time & mileage) for the first (12) twelve months from the date of installation or eighteen (18) months from date of shipment from Lang Manufacturing, which ever comes first.

IV. This warranty does not cover routine general maintenance, periodic adjustments, as specified in operating instructions or manuals, and consumable parts such as quartz elements, or labor costs incurred for removal of adjacent equipment or objects to gain access to Lang Equipment. This warranty does not cover defects caused by improper installation, abuse, careless operation, or improper maintenance of equipment.

V. THIS WARRANTY IS EXCLUSIVE AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, EACH OF WHICH IS HEREBY EXPRESSLY DISCLAIMED. THE REMEDIES DESCRIBED ABOVE ARE EXCLUSIVE AND IN NO EVENT SHALL LANG BE LIABLE FOR SPECIAL, CONSEQUENTIAL OR INCIDENTAL DAMAGES FOR THE BREACH OR DELAY IN PERFORMANCE OF THIS WARRANTY.

VI. Lang Equipment is for commercial use only. If sold as a component of another(OEM) manufacturer’s equipment, or if used as a consumer product, such Equipment is sold AS IS and without any warranty.